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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/517,546	12/10/2004	Wayne Francis Callen	23003-0001	5667
26587 7590 09/25/2007 MCNEES WALLACE & NURICK LLC 100 PINE STREET P.O. BOX 1166 HARRISBURG, PA 17108-1166			EXAMINER AMRANY, ADI	
			ART UNIT 2836	PAPER NUMBER
			MAIL DATE 09/25/2007	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/517,546	<b>Applicant(s)</b> CALLEN ET AL.	
	<b>Examiner</b> Adi Amrany	<b>Art Unit</b> 2836	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 10 August 2007.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 19-23, 25-34 and 38 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 19-23 and 25-30 is/are allowed.
- 6) ☒ Claim(s) 31-34 and 38 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>7/9/07</u> . | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Response to Arguments***

1. Applicants' arguments filed August 10, 2007 with respect to claims 19 and 25 have been considered and are persuasive. Applicants' arguments with respect to claim 31, however, are not persuasive. Unlike claims 19 and 25, claim 31 does not define the reference voltage used to trigger the sensor relay.

### ***Information Disclosure Statement***

2. The information disclosure statement filed June 27, 2005 fails to comply with 37 CFR 1.98(a)(3) because it does not include a concise explanation of the relevance, as it is presently understood by the individual designated in 37 CFR 1.56(c) most knowledgeable about the content of the information, of each patent listed that is not in the English language. It has been placed in the application file, but the information referred to therein has not been considered.

### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 31-34 and 38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Paine (US 3,579,041).

With respect to claim 31, Paine discloses a control circuit (fig 1, item 10; col. 1, lines 29-33) including:

at least two input terminals (item 11; col. 3, lines 58-60) for electrically connecting with a power source;

at least two output terminals (item 12; col. 3, lines 58-60) for electrically connecting with a load;

a switching relay (item 20; column 1, lines 45-64) having a switching coil (item 22), the switching coil configured to be selectively energized in response to a signal () to progress the relay between two modes wherein:

in one of the modes the input and output terminals are respectively electrically connected for allowing the load to receive power from the source via the switching relay (col. 2, line 70 to col. 3, lines 2);

and in the other mode the input and output terminals are electrically disconnected for preventing the source from supplying power to the load via the switching relay (col. 3, lines 14-20); and

a sensor relay (item 30; col. 1, line 65 to col. 2, line 4) having a sensor coil (item 32), the sensor coil for progressing to an energized state in response to a fault condition indicated by a reference voltage (across item 48) and providing the signal (col. 3, lines 7-20), wherein in the absence of a fault condition the circuit includes no coils that are energized (col. 1, lines 61-64).

Paine discloses the claimed invention except that Paine uses magnetic latching relays as opposed to conventional (single coil) relays (col. 1, lines 51-53). Paine shows that magnetic relays and conventional relays are equivalent structures known in the art. Therefore, because there two relays are art-recognized equivalents at the time of the

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invention was made, one of ordinary skill in the art would have found it obvious to substitute a conventional relay for the Paine magnetic relay.

With respect to claim 32, Paine discloses the sensor relay has a low voltage coil that is energized in response to the fault condition (item 32). The Paine coil is sensitive to current (col. 1, lines 72-73). Since the coil has inherent resistance properties, a voltage drop is created across the terminals of the coil.

With respect to claim 33, Paine discloses the low voltage coil is energized by a DC voltage (item 11). The Paine system is powered by a DC power (column 1, lines 33-35).

With respect to claim 34, it would have been obvious to one skilled in the art to configure the low voltage coil energized by a DC voltage of greater than one volt, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

With respect to claim 38, Paine discloses by progressing to the energized state (connected to point 24), the switching relay de-energizes the sensor coil (col. 1, lines 56-58 and 61-64). Paine discloses that none of the coils remain energized.

***Allowable Subject Matter***

5. Claims 19-23 and 25-30 are allowed.
6. The following is an examiner's statement of reasons for allowance:

With respect to claim 19, the prior art does not teach or suggest, inter alia, a sensor relay, having a single coil, the coil configured to be energized in response to a reference signal, wherein the reference signal "being derived from a voltage differential

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between one or more of the power source conductors and a floating reference point based on a reference conductor that is electrically isolated from the power source conductors and the at least two output terminals.”

With respect to claim 25, the prior art does not teach or suggest, inter alia, only one sensor coil being progressed to an energized state in response to a fault condition indicated by a reference voltage, wherein the reference voltage “is a voltage between either one of the input terminal or the output terminal and a reference conductor electrically isolated from the input and output terminals.”

The prior art does not teach or suggest triggering the sensor coil through a reference voltage as defined in claims 19 and 25. This reference voltage is not provided in claim 31, which is rejected as discussed above.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled “Comments on Statement of Reasons for Allowance.”

Claims 20-23 and 26-30 are allowable since they depend upon allowable claims 19 and 25, respectively.

### ***Conclusion***

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Adi Amrany whose telephone number is (571) 272-0415. The examiner can normally be reached on Mon-Thurs, from 10am-5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Sherry can be reached on (571) 272-2800 x36. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

AA



MICHAEL SHERRY  
SUPERVISORY PATENT EXAMINER